



**GENON BRANDYWINE ASH STORAGE SITE
BRANDYWINE, MARYLAND
2019 ANNUAL CCR INSPECTION REPORT**

To: Walter Johnson, GenOn MD Ash Management LLC
From: Jeffrey Hutchins, P.E., AECOM
Date: January 6, 2020
RE: Annual Coal Combustion Residuals (CCR) Inspection Report
Brandywine Ash Storage Site Operating Cell Phase 2

1.0 Introduction

As of October 19, 2015, the Brandywine Ash Storage Site (Brandywine site) has been regulated by the Code of Federal Regulations (CFR) under 40 CFR §257 Subpart D – Standards for Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments. Section §257.84 of this regulation requires operators of existing CCR units to conduct an annual inspection by a qualified professional engineer to ensure the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices.

The initial 2015 Annual CCR Inspection Report for the Brandywine Phase 2 site was completed and placed in the Brandywine Operating Record on January 18, 2016, as required by Section §257.84.b(3). The regulations require that subsequent to completion of the initial Annual CCR Inspection Report, the owner/operator conduct inspections on an annual basis, with the completion date of the Annual Inspection Report being based on the completion date of the previous Annual Inspection Report.

The annual inspection for the Phase 2 operational area for the Brandywine site was conducted on December 10, 2019 and will be placed in the Brandywine operating record by January 18, 2020.

2.0 Site Background

The Brandywine site is located at the intersection of North Keys Road and Gibbons Church Road in the town of Brandywine in Prince George's County, Maryland. The facility has historically received and stored CCRs produced at GenOn's Morgantown and Chalk Point Generating Stations. The Brandywine facility was initially constructed in 1971 and has received ash in four cells since then, including Phase 1, Phase 2, and two historical areas.

Phase 2, which is the currently operational cell at the site, encompasses approximately 33 acres. It is located south of Phase 1 and the two historical areas, and the main access road in the southern portion of the site. Phase 2 is subdivided into the current operational Phase 2A area (approximately 8 acres), which is the current active CCR storage area, and Phase 2B (approximately 25 acres) which has reached final design elevation and has been fully stabilized with a soil cover layer and heavy vegetation.

Phase 1 and the two historical areas have been closed for many years and were previously capped with a soil layer and stabilized with heavy vegetation. During the period from 2016 to 2018, these cells were closure capped with an engineered geosynthetic closure capping system approved by the Maryland Department of the Environment (MDE). MDE conducted a final walkthrough on the closure cap constructed on Historical Areas 1 and 2 and Phase 1 on

November 20, 2018. On June 21, 2019, MDE issued a letter to GenOn approving the closure cap.

3.0 Phase 2 Inspection Results

On December 10, 2019, a Maryland Registered Professional Engineer employed by AECOM, accompanied by a representative of Bowling Brothers, GenOn's onsite operations and maintenance contractor, conducted an inspection of the Brandywine operational Phase 2 cell on behalf of GenOn. The results of the inspection are presented in the subsections below. The inspection form that was prepared during the inspection is presented as Attachment A to this report.

3.1 Access Roads and Security

From North Keys Road, access to the Brandywine site is by way of a 2,200-foot long paved/crushed aggregate road that leads to the fenced and gated entrance to the site. Any person, contractor, or vendor entering the Brandywine site must pass through an automated security gate entrance into the site. A security guard station located at the gate and is manned during times of high activity at the site. During a currently active project at the site, the gate is open for two hours in the morning to allow site access by workers and deliveries; after that two-hour window, the gate is closed and access to the site is monitored by personnel at the guard station. Once this active project is completed, the automated gate will remain closed during all hours of the day and access to the site will be gained only through contact with site personnel or by pre-authorized entry.

From the gated entrance, the access road to the site office trailers is paved and is in reasonably good condition. Roadside drainage features are well kept and in acceptable condition. The access road around Phase 2 is a thick layer of crushed aggregate in good condition, and it runs from the office trailers to Pond 006.

The interior access roads have a speed limit of 15 miles per hour and have the proper signage.

3.2 Phase 2 Operational Areas

- **Exterior Side Slopes:** The exterior side slopes of Phase 2 are heavily vegetated and stabilized, and are in very good condition; there are no signs of erosion on these slopes.
 - The Phase 2A exterior side slopes run along the western, northern and eastern sides of the Phase 2 site. The western slopes abut the access road and begin at the Phase 2A/2B juncture. These slopes are all heavily vegetated and well stabilized. The eastern side slopes contain a number of drainage benches that are heavily vegetated, well stabilized, with no signs of erosion along the drainage pathways.
 - The Phase 2B exterior side slopes run along the western, southern and eastern sides of the Phase 2 area and have reached design elevations. These slopes are all stabilized with heavy vegetation and have no signs of erosion. These slopes contain a number of drainage benches that are all heavily vegetated, well stabilized, with no signs of erosion along the drainage pathways.
- **Interior Side Slopes:** The interior slopes of Phase 2A are temporarily vegetated and stable, and appear to be well maintained. Because Phase 2B has reached design elevations, there are no interior slopes – the top of Phase 2B is graded to drain to the side slopes and drainage benches, and it is heavily vegetated and well stabilized.
- **CCR Storage in 2019:** During the period from December 2018 to December 2019, the Brandywine site has not received any additional CCR material from either of the two GenOn generating stations or from any other offsite sources. The operational ash floor of Phase 2A is well maintained by GenOn's operations and maintenance contractor. During this reporting period, GenOn implemented the measures described in the Initial

CCR Fugitive Dust Control Plan to control all sources of CCR fugitive dust from the existing Phase 2 site.

- Estimated In-place CCR Volume: Based on the CCR volume from 2018 and the fact that the site has not received any new CCR material in 2019, the estimated in-place volume of CCR in Phase 2 remains approximately 1,367,000 cubic yards, as reported in 2018. This volume is based on the original design documents and the estimated CCR capacity of Phase 2 (approximately 1,468,300 cubic yards), and the remaining estimated volume in Phase 2 (approximately 101,000 cubic yards) based on aerial topography of Phase 2 and the amount of CCR delivered to the site from 2016 to 2018.
- Site Geometry: The exterior side slopes of Phase 2 remain fixed in location; consequently, there has been no change in the overall geometry of Phase 2 during 2019.
- Phase 2 Drainage and Chimney Drains: The Phase 2A operating floor has been properly compacted and graded to promote positive drainage to the chimney drains and the interior drainage system. In 2019, the floor of Phase 2A continues to remain well graded with drainage to the existing chimney drains. The existing chimney drains appear to be constructed and functioning properly. The interior chimney drains have been constructed to higher elevations in advance of any future CCR placement.
- There do not appear to be any areas in Phase 2A or 2B that represent actual or potential areas of structural weakness of the CCR unit. There do not appear to be any existing conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit.

3.3 Sediment and Erosion Control Measures

- Satisfactory sediment control measures are being employed in Phase 2, including:
 - Stabilized construction entrance materials have been installed and used for any vehicle entering into Phase 2A.
 - Super silt fence is installed around the perimeter of the toe of the northern and eastern exterior slopes.
 - Silt fence is installed on the northern slope of Phase 2B where it meets the southern side of Phase 2A to mitigate sediment transport into Phase 2A.
 - Any vehicles leaving Phase 2A are washed at the dedicated truck wash station before leaving the site.

3.4 Storm Drainage Features

- Roadside Drainage Channels: Drainage channels along the access roads are well vegetated and stabilized with no signs of erosion.
- Operating Area Floor & Chimney Drains: The Phase 2A floor is graded and compacted to promote positive drainage to the interior chimney drains. The chimney drains appear to be constructed and functioning properly.
- Exterior Slope Benches: The Phase 2 exterior slope benches are heavily vegetated and well stabilized. There are minimal signs of erosion on the benches which convey stormwater runoff to the perimeter ditches. The perimeter ditches are stabilized and in good condition.
- Run-on Control: Because of the progress of CCR placement in Phase 2, stabilized exterior side slopes have been constructed around the entire perimeter of Phase 2, precluding any offsite storm water run-on into Phase 2 from occurring. Most of Phase 2B drains to the stabilized exterior slopes and benches and not into Phase 2A. There will be some minor stormwater run-on into the Phase 2A operating area from the access

road connecting Phase 2A with the top of Phase 2B. The access road is stabilized with compacted bottom ash, and a culvert located at the bottom of the access road conveys stormwater into the graded, central drainage portion of Phase 2A. This stormwater run-on is controlled with the interior drainage system of Phase 2A and the chimney drains.

- **Pond 006:** Leachate from Phase 2 enters Pond 006 at the forebay through three HDPE pipes that discharge water onto a grouted rip rap apron. The rip rap apron appears to be in good condition and free of erosion. The weir connecting the forebay and the main pond area appears to be in good condition, free of erosion, with a small amount of water flowing into the main pond. The primary discharge outlet from Pond 006 has been closed and water from Pond 006 is now pumped to the site's Waste Water Treatment System located on the plateau near Pond 004. Consequently, there are currently no discharges from the Pond 006. The fabricform emergency spillway appears to be well maintained and in good condition.

3.5 Recordkeeping

- Daily operations and maintenance inspection reports and weekly CCR inspection reports are kept in binders in the onsite GenOn MD Ash office trailer. These reports are organized and maintained by GenOn's onsite operations and maintenance contractor.

4.0 **Brandywine Phase 2 Operational Areas Overview**

During the 2019 reporting period, the operating portion of Phase 2 (Phase 2A) did not receive any CCR material from the Morgantown and Chalk Point Generating Stations or from any other offsite sources. The geometry of the site, the floor of the operating area, and internal drainage system, including the existing chimney drains, has not changed during 2019, but the internal features of Phase 2A are well maintained and in good condition.

Phase 2 is well maintained and drainage and erosion control features appearing to functioning properly. There did not appear to be any areas in Phase 2 that represent actual or potential areas of structural weakness of the CCR unit. There are no existing conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit.

Name: Jeffrey Hutchins

Date: 1/06/20


Maryland PE #: 13186



12420 Milestone Center Drive, Suite 150
Germantown, MD. 20876
Tel: 301.820.3000 Fax: 301.820.3009
www.aecom.com



ANNUAL CCR STORAGE SITE INSPECTION CHECKLIST

Facility Name: Brandywine Ash Storage Facility			
Address: 11710 North Keys Road, Brandywine, Maryland 20613			
Date: 12/10/2019	Time: 10:40 AM	Weather: Raining, cloudy, 40°	
Inspection Representatives			
GenOn: Darren Buckler (Bowling Brothers GenOn contractor)			
AECOM: Jeffrey Hutchins		PE License #: 13186	
Other:			
Site Data			
Cell ID: Phase 2	Acreage: 33 acres		
Operational Area of Cell: (Phase 2A) 8 acres		Closed Area of Cell: (Phase 2B) 25 acres	
Operational Criteria			
	Acceptable	Needs Improvement	Comments
1. Security/Entrance Gate	√		
2. Condition of Access Road	√		
3. Operating Cell	√		Appears to be in good condition.
3a. Condition of Exposed Ash	√		
3b. Condition of Periodic Cover Soils	√		
3c. Acceptable Dust Control Measures	√		
3d. General Integrity of Operating Cell/Signs of Distress	√		
3e. Condition of Chimney Drains	√		Appears to be in good condition.
3f. Condition of Erosion Control Measures	√		
3g. Visual signs of Erosion or Washouts	√		None.
3h. General Condition of Leachate Piping, Cleanouts	√		
4. Stormwater Management	√		
4a. Condition of Ditches, Diversions, Letdowns	√		Appears to be in good condition.
4b. Condition of Run-Off Control System	√		
4c. Condition of Perimeter Areas (stable, unstable, erosion, etc.)	√		
Comments:			
<p>The operating portion of Phase 2 is well maintained with no areas of instability or potential weakness. There are no conditions at the present time that are disrupting or have the potential to disrupt the operation or safety of Phase 2.</p>			
Jeffrey Hutchins			
Print Name of Engineer Completing Form		Signature	
		12/10/2019	
		Date	